

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-14. (Canceled)

15. (Original) A method for forming a calibration standard for semiconductor metrology tools, the method comprising:

providing a substrate having a surface with a rms surface roughness of less than about 1.0 Å;

forming on the surface of the substrate a calibration layer having a thickness of about the same thickness as a layer to be measured; and

forming over the calibration layer a protective layer to protect the calibration layer from deterioration.

16. (Original) The method of Claim 15, wherein the method includes cleaning the surface of the substrate prior to forming the calibration layer.

17. (Original) The method of Claim 15, further including measuring the thickness of the calibration layer after it is formed and measuring the thickness of the calibration layer and the thickness of the protective layer after the protective layer is formed.

18. (Original) The method of Claim 15, wherein forming the calibration layer comprises forming the calibration layer having a thickness of in the range of about 5 Å to about 200 Å.

19. (Original) The method of Claim 18, wherein forming the calibration layer comprises forming the calibration layer having a thickness of in the range of about 5 Å to about 50 Å.

20. (Original) The method of Claim 19, wherein forming a calibration layer comprises forming the calibration layer to a thickness of in the range of about 5 Å to about 50 Å and having a thickness tolerance of less than about 4% of layer to be measured.

21. (Original) The method of Claim 18, wherein forming a calibration layer comprises forming the calibration layer using a material selected from among silicon dioxide, zirconium dioxide, hafnium dioxide, aluminum oxide, tantalum oxide, hafnium silicate, and zirconium silicate.

22. (Original) The method of Claim 20, wherein forming a calibration layer comprises forming the calibration layer using a material selected from among silicon dioxide, zirconium dioxide, hafnium dioxide, aluminum oxide, tantalum oxide, hafnium silicate, and zirconium silicate.

23. (Original) The method of Claim 15, wherein forming the protective layer comprises forming the protective layer having a thickness of in the range of about 50 Å to about 1000 Å.

24. (Original) The method of Claim 23, wherein forming the protective layer comprises forming the protective layer of a material consisting of one of HfO₂, ZrO₂, Ta₂O₅, Al₂O₃, HfSiO₃, and ZrSiO₂ and having a thickness of in the range of 50 Å to about 100 Å thick and having a thickness tolerance of less than about 2% of a desired thickness for the protective layer.

25. (Original) The method of Claim 23, wherein the protective layer is formed having a thickness tolerance on the order of about 1% to about 2% of a desired thickness for the protective layer.

26. (Original) The method of Claim 23, wherein forming the protective layer comprises forming the protective layer of a material selected from among amorphous silicon, polysilicon, and SiGe and having a thickness of in the range of 50 Å to about 2000 Å thick and having a thickness tolerance of about 4% of a desired thickness for the protective layer.

27. (Original) The method of Claim 26, wherein the protective layer is formed having a thickness tolerance in the range of about 1% to about 2% of a desired thickness for the protective layer.